

PyXRF: X-ray Fluorescence Analysis Package

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A sophisticated fluorescence analysis package (PyXRF) has been developed for NSLS-II X-ray Fluorescence Microscopy beamlines, such as HXN and SRX. This package contains a high-level fitting engine, comprehensive command-line/GUI design, rigorous physics calculation and a powerful visualization interface. PyXRF offers a method of automatic elements finding, so users do not need to spend extra time selecting elements manually. Moreover, by using PyXRF we can observe the result of forward calculation at real time while adjusting input parameters. This will help us perform sensitivity analysis, and find an appropriate initial guess for fitting. Furthermore, we also create an advanced mode for professional users to construct their own fitting strategies with a full control of each fitting parameter. A convenient I/O interface was designed to obtain data directly from NSLS-II experimental database. We also discuss some fitting results from latest experiments at NSLS-II.